REMARKS

Claims 1-3 and 5-13 are pending in the present application. Claim 4 has been canceled. Claims 9-13 have been added to more particularly define what Applicant regard as their invention. Claims 1, 3, 5, 8, and 9 are independent.

Rebuttal to Office Actions Response to Arguments

The final Office Action contains various rebuttals to Applicant's arguments made previously. The Office Action's responses fail to address the sum total of the arguments made. In particular, the Office Action parses Applicant's responses into small pieces and then provides a rebuttal as to some of these small pieces. Further, the response takes each of these pieces out of context and fails to provide a full responsive argument. This is evident in the "Response to Arguments" section of the final Office Action dated February 25, 2003: The Office Action merely quotes portions of claim language and arguments and then responds to each of these portions individually. In no event does the Office Action address the full combination of features recited in the pending claims.

In other words, such a piecemeal examination of claim language taken out of context fails to establish the Office Action's burden of establishing a *prima facie* case.

A good example of this improper reasoning and failure to rebut is the "second" argument found on Page 2 of the final Office Action. To wit, the Office Action states as follows:

> "Second, Applicant argues that Paik does not teach, 'agents of action in conjunction'.
> In response to Applicant's arguments, the Examiner respectfully submits that in particular, Paik teaches this

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limitation as, the subject concept is the cause on an action happening, or it may be the recipient of the effects of an action or event. These are different relations which distinguish how the same two concepts. For instance, the two sentences, "Fred raised taxes," and "Fred's taxes were raised" both the action "raised" in the first sentence, while Fred is the recipient of the action "raising taxes" in the second sentence (col. 13, lines 46-55 et seq)."

Now, let us refer to the actual argument made by the Applicant. That argument appears on Page 6, in the paragraph bridging Pages 6 and 7. That argument states that:

> "Paik et al. fails to disclose the usage of agents of action in conjunction with destination-of-travel data as claimed in the Applicant's claimed invention. A very detailed example further showing how the present invention works versus the Paik et al. reference was submitted in the June 7, 2002 response on pages 2 through 5. For purposes of brevity and avoiding duplication, this information will not be included in this response. Rather, the Examiner is respectfully asked to revisit the example in light of the present amendment."

Thus, it can clearly be seen that Applicant did not merely argue the disembodied phrase "agents of action in conjunction." In stark contrast, Applicant had submitted a very full argument and referred to an even fuller and exhaustively detailed example showing how the present invention works versus the Paik, et al. patent. Rather than provide a substantive response to this argument, the Office Action merely responds with a generalized argument that Paik, et al. teaches "agents of action in conjunction" in a general sense. This generalized response fails to address the specific claim language and arguments made and is, therefore, insufficient to rebut Applicant's arguments.

35 U.S.C. § 102(e) Paik Rejection

Claims 1, 2, 6, and 8 are rejected under 35 U.S.C. § 102(e) as being anticipated by Paik (U.S.P. 6,076,088). This rejection, insofar as it pertains to the presently pending claims, is respectfully traversed.

Paik discloses a method and system that extracts information from a large corpus of work. Specifically, Paik extracts Concept Relation Concept (CRC) triples from a large body of text to build a KR (Knowledge Representation) database. As discussed in column 9, lines 44-62, Paik processes a raw text document by first parsing the text to identify sentence and paragraph boundaries and then by utilizing an optional syntactic parser that tags each word with a part of speech. These syntactic tags are then utilized to construct the main data format or Knowledge Representation of the text. Mainly, these syntactic tags are utilized to construct the Concept Relation Concept triple. This is further shown in Figure 11, wherein the target article about Robert Dole is processed to extract numerous CRC triples for the subject "Bob Dole." The CRC data representation is a very specific representation utilized by Paik to advantage because it permits rigorous analysis of large amounts of text. The CRC triple data representation also permits a wide range of queries.

Significantly, when a query is entered into the Paik system, the query is also represented as a CRC triple. (See the paragraph bridging columns 9 and 10 where the query processing module 100' includes a CRC extractor 105 and a CRC-to-KR Translator 110'). Most significant is the Similarity Measurer 55, which is the unit responsible in Paik for matching queries to knowledge stored in the KR database 115.

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The Knowledge Representation of the query and the corpus is quite distinct from and does not disclose or suggest the categorical storage of information and categorical searching processing utilized by the invention.

More specifically, Paik fails to disclose or suggest a database that stores object data in association with a plurality of categorized attribute words categorized according to sentence elements of a natural language. The KR database utilized by Paik does not categorize according to sentence elements of a natural language. Quite to the contrary, Paik utilizes the CRC triple and KR representation thereof to both store the text information and compare query text to the stored text for a response to a query.

Paik also fails to disclose or suggest categorizing search words corresponding to sentence element categories of a natural language. More specifically and in terms of the amended claim 1 language, Paik fails to disclose or suggest a criterion retrieval unit that analyzes the search criterion and retrieves categorized search words respectively categorized in corresponding sentence element categories of the natural language. Although Paik does permit queries to entered in the form of a sentence, Paik fails to disclose or suggest categorization of search words as recited in the claims.

Paik further fails to disclose or suggest an object retrieval unit that categorically searches sentence categories of the database using each of the categorized search words, respectively associated with the sentence element categories as recited in amended claim 1. Clearly, the search performed by Paik determines the "degree of similarity between the query KR unit(s) and every KR unit in the KR database 115" (see column 22, lines 17-19). The KR units are quite distinct from and not even remotely

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suggestive of the categorical storage, search and retrieval utilized by the invention wherein the categories correspond to the sentence element of a natural language. Such sentence elements include, for example, agent-of-action, action, and object-of-action categories. While Paik may mention terms of speech, such as action and agent-of-action, these parts of speech are utilized in an entirely different manner by Paik to construct CRC triples and KR representations.

Paik also fails to enjoy many of the advantages achieved by the present invention. Namely, by categorizing the database into separate categories corresponding to the sentence elements of a natural language (e.g., agent-of-action, action, object-of-action, etc.), the search and retrieval steps are faster and more efficient. In other words, an input sentence is analyzed to extract search criteria. Each of the search criteria is categorized. During the search process, the categorized search data is matched against all of the attribute data within that same category. For example, search data that has been identified as an agent-of-action category is compared against all of the attribute data in the agent-of-action category of the database. Thus, only a small subset of the entire database needs to be searched which greatly reduces the search time and increases the efficiency of the search process.

In contrast, Paik's search process is much slower and less efficient. Indeed, the entire KR Database 115 would need to be searched for each KR unit of the query. Thus, an extremely large database such as one taken from an entire encyclopedia would require an exhaustive and lengthy search of all of the extracted KR units in order to match a search KR unit against that gigantic database.

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Moreover, the application of the present invention is quite distinct from application of Paik. Namely, Paik is a robust information extraction system that extracts knowledge and information from a wide variety of text and is able to respond to a large range of queries. The present invention, in contrast, is primarily concerned with determining destination data based on a natural language query. The type of search being performed is for destination data. Furthermore, the queries made of such a database are to determine the destination desired or inferred from a natural language query. Such queries are limited in form and scope and can be broken down into sentence element categories for efficient storage and retrieval therefrom.

Paik further fails to disclose or suggest the method of searching object data as recited in claim 8. In particular, Paik fails to disclose or suggest storing object data in association with a plurality of categorized attribute words, wherein the attribute words are categorized and stored according to sentence elements of a natural language. Paik further fails to disclose or suggest searching sentence element categories of the database or retrieving object data associated with the categorized attribute words that match a single search word or a plurality of search words in the same category as recited in amended claim 8. Because Paik fails to disclose or suggest any such sentence categories as argued above, Paik is incapable of disclosing or suggesting storing, searching, or retrieving utilizing of the sentence categories as further recited in amended claim 8.

Pail further fails to disclose or suggest a destination of travel object data search method as recited in amended claim 3. More specifically, Paik fails to disclose or

suggest retrieving a plurality of search words by analyzing and categorizing the search criterion in accordance with a grammar of the natural language. Paik further fails to disclose or suggest conducting a category-by-category search relative to a plurality of sentence element categories associated with a plurality of destination of travel object data items. At best, Paik discloses a KR unit by KR unit search which is not even remotely suggestive of the category-by-category search utilized by the invention particularly where the categories are in accordance with a grammar of a natural language.

For all of the above reasons, taken alone or in combination, Applicant respectfully requests reconsideration and withdrawal of the § 102(e) Paik rejection.

35 U.S.C. § 103 Paik-DeLorme

Claims 3, 5, and 7 are rejected under 35 U.S.C. § 103 as being unpatentable over Paik in view of DeLorme (U.S.P. 5,948,040). This rejection, insofar as it pertains to the presently pending claims, is respectfully traversed.

The arguments made above with respect to Paik are hereby incorporated by reference, Applicants respectfully submit that these arguments are sufficient to remove Paik as a valid and applicable reference against the pending claims. Furthermore, DeLorme fails to remedy any of the noted deficiencies in Paik.

DeLorme is merely a travel reservation and planning system that permits a user to make travel arrangements and plan travel activities. For example, a user may input preferred transportation mode, travel times/date frames, starting point, final destination,

etc. to ultimately generate a "map ticket" containing various media that guides the tourist along the proposed travel route.

First of all, it is not understood how or why the Office Action proposes to combine DeLorme with Paik. The Office Action admits that Paik does not teach destination of travel data and utilizes the submission as a "basis" for combining with DeLorme. Paik, however, already discloses analyzing location information in a document. As discussed in column 16, line 45 through column 17, line 59, Paik discloses a very specific set of special semantic relations that permits Paik's invention to analyze text having location or geographic information therein. These special semantic relations, in other words, permit Paik to form the CRC triples and knowledge representations that are key to his storage and retrieval functions. It is not understood how DeLorme's travel planner fits in any way into the Paik system. Applicant is left to conclude that the sole source of motivation for combining these references taken from Applicant's specification, which is an improper source of motivation.

Assuming, *in arguendo*, that the combination of Paik and DeLorme is somehow proper, Applicant asserts that this combination still fail to teach or suggest the invention, particularly as recited in the amended claims. DeLorme has no concept of categorization according to sentence element. DeLorme fails to disclose or suggest either storing or retrieving information utilizing sentence element categories. While DeLorme does disclose destination information and processing destination information as a part of a travel planning software, such a purpose in the implementation thereof are

entirely distinct from, not combinable with, and certainly not disclosing or suggesting the invention as recited in the amended claims.

For all of the above reasons, taken alone or in combination, Applicant respectfully request reconsideration and withdrawal of the § 103 Paik-DeLorme rejection.

Invitation For Examiner Interview

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Michael R. Cammarata (Reg. No. 39,341) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Conclusion

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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